CLAIMS

What is claimed is:

1. A computer implemented method for efficiently representing and applying business rules in a transaction processing relational database management system environment, comprising:

providing a rule-based expert-system shell;

providing a late-binding mechanism within a RDBMS (relational database management system) environment;

creating an extensible data maintenance mechanism using the rule-based expert system shell and the late binding mechanism; and

managing sets of approval rules governing business transactions generated by other transaction-processing applications by using the set of approval rules applied to the extensible data maintenance mechanism.

2. The method of claim 1 wherein extensible data maintenance mechanism is configured to execute within the RDBMS environment.

3. The method of claim 1 wherein extensible data maintenance mechanism is configured to store and execute on the RDBMS a plurality of sets of rules, wherein one set of rules per transaction type is registered with extensible data maintenance mechanism.

4. The method of claim 1 wherein the approval rules to define conditions which can be manipulated using the Boolean operators.

5. The method of claim 1 wherein the expert system shell is configured to execute rules using a same action type within a given rules type to provide extensibility.

6. The method of claim 1 wherein extensible data maintenance mechanism is configured to allow an end user to create, edit, or delete attribute names of the approval rules.

7. The method of claim 1 wherein extensible data maintenance mechanism is configured to allow an end user create, edit, or delete a query string associated with an attribute name for a given transaction type.

8. A computer implemented method for efficiently representing and applying business rules in a transaction processing relational database management system environment, comprising:

providing a rule-based expert-system shell;

providing a late-binding mechanism within a RDBMS (relational database management system) environment wherein the rule-based expert system shell is configured to interpret a query string at runtime via the late-binding mechanism;

creating an extensible data maintenance mechanism using the rule-based expert system shell and the late binding mechanism; and

managing sets of approval rules governing business transactions generated by other transaction-processing applications by using the set of approval rules applied to the extensible data maintenance mechanism.

9. The method of claim 1 wherein the rule-based expert system shell is configured to interpret the query string at runtime via a dynamic PL/SQL late-binding mechanism.

10. The method of claim 8 wherein the rule-based expert system shell is configured to allow an end user to create, edit, or delete conditions defined on attribute names for which a given transaction type has defined query strings.

11. The method of claim 10 wherein the rule-based expert system shell is configured to compute a truth value of a condition at runtime by fetching a value of an associated attribute and comparing it with the condition's set of allowed values.

12. The method of claim 8 wherein the rule-based expert system shell is configured to implement an approval-group action, wherein a list of approvers is fetched from a table within the RDBMS, or wherein the rule-based expert system shell executes a PL/SQL procedure to determine the list of approvers.

13. The method of claim 8 wherein the rule-based expert system shell is configured to maintain as data, sets of approval rules for business transactions generated by external applications running on the RDBMS.

14. A computer implemented method for efficiently representing and applying business rules in a transaction processing relational database management system environment, comprising:

providing a rule-based expert-system shell;

providing a late-binding mechanism within a RDBMS (relational database management system) environment wherein the rule-based expert system shell is configured to interpret a query string at runtime via the late-binding mechanism;

creating an extensible data maintenance mechanism using the rule-based expert system shell and the late binding mechanism;

defining a plurality of types of approval rules, each of the approval rules making a respective contribution to a list of approvers required for a transaction; and

managing the approval rules by applying the approval rules to the extensible data maintenance mechanism.

15. The computer implemented method of claim 14 wherein the extensible data maintenance mechanism is configured to use list-generation or authority rules to determine a chain of authority a list includes, and where each said chain begins and ends.

16. The computer implemented method of claim 14 wherein the extensible data maintenance mechanism is configured to use exception rules to suppress otherwise applicable authority rules sharing a common set of attributes with an exception, thereby enabling the applications of different action types to narrow sets of circumstances.

17. The computer implemented method of claim 14 wherein the extensible data maintenance mechanism is configured to use list-modification rules to modify a transaction chain of authority when a certain approver is in a specified position in a approver list.

18. The computer implemented method of claim 14 wherein the extensible data maintenance mechanism is configured to use substitution rules to substitute one approver for another approver, when the other approver is found in a transaction's approver list.

19. The computer implemented method of claim 14 wherein the extensible data maintenance mechanism is configured to use pre-approval rules to augment a transaction chain of authority with members of an approval group, such that the approval group precedes the transaction chain of authority.

20. The computer implemented method of claim 14 wherein the extensible data maintenance mechanism is configured to use post-approval rules to augment a transaction chain of authority with members of an approval group, so that the approval group follows the transaction chain of authority.

21. A computer implemented method for efficiently representing and applying business rules in a transaction processing relational database management system environment, comprising:

a) determining applicability of each of a plurality of rules and forming a set of applicable rules there from;

b) removing from the set of applicable rules those rules suppressed by an applicable exception rule;

c) sorting remaining authority and exception rules by action type;

d) executing each action type required by the remaining authority exception rules;

e) determining the applicability of each of a set of list-modification and list substitution rules to a chain of authority resulting from the step d);

f) sorting the list-modification rules by action type and executing each action type;

g) repeat step f) for applicable substitution rules; and

h) augmenting an approver list from step g) above with members of approval groups required by any applicable pre-approval rules.

22. The computer included method of claim 22 further including:

altering an approver list by adding approvers to the approver list or removing approvers from the approver list by using a transaction-processing application via API calls.